Best Management Practices (BMPs) For Fluid Minerals

- **The Challenge**
- **The Solution**

BLM Washington Office – Fluid Minerals Group

For More Information or Comments, Contact: Jim Perry (202) 452-5063

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Advertisement

Visual Resource Management BMPs For Fluid Minerals

Self Study Course

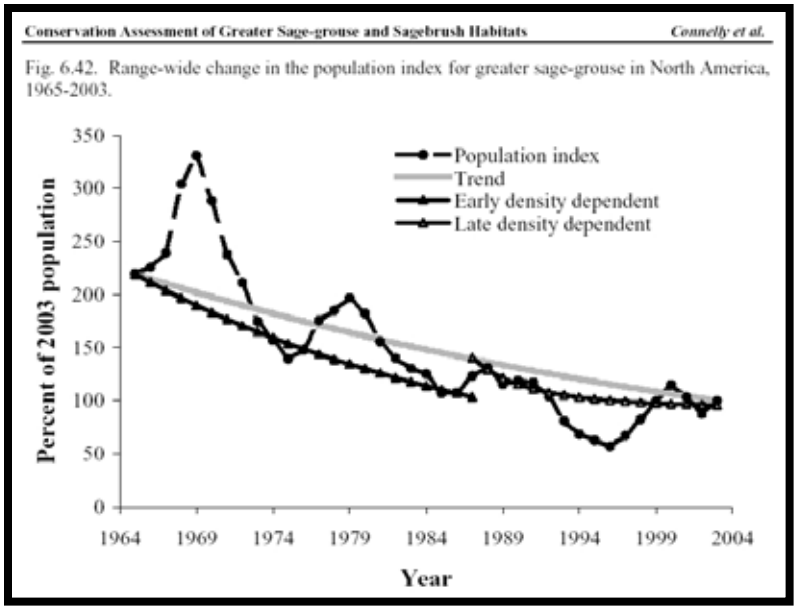
E-Mail: Elvin_Clapp@blm.gov

THE CHALLENGE

Sage-grouse

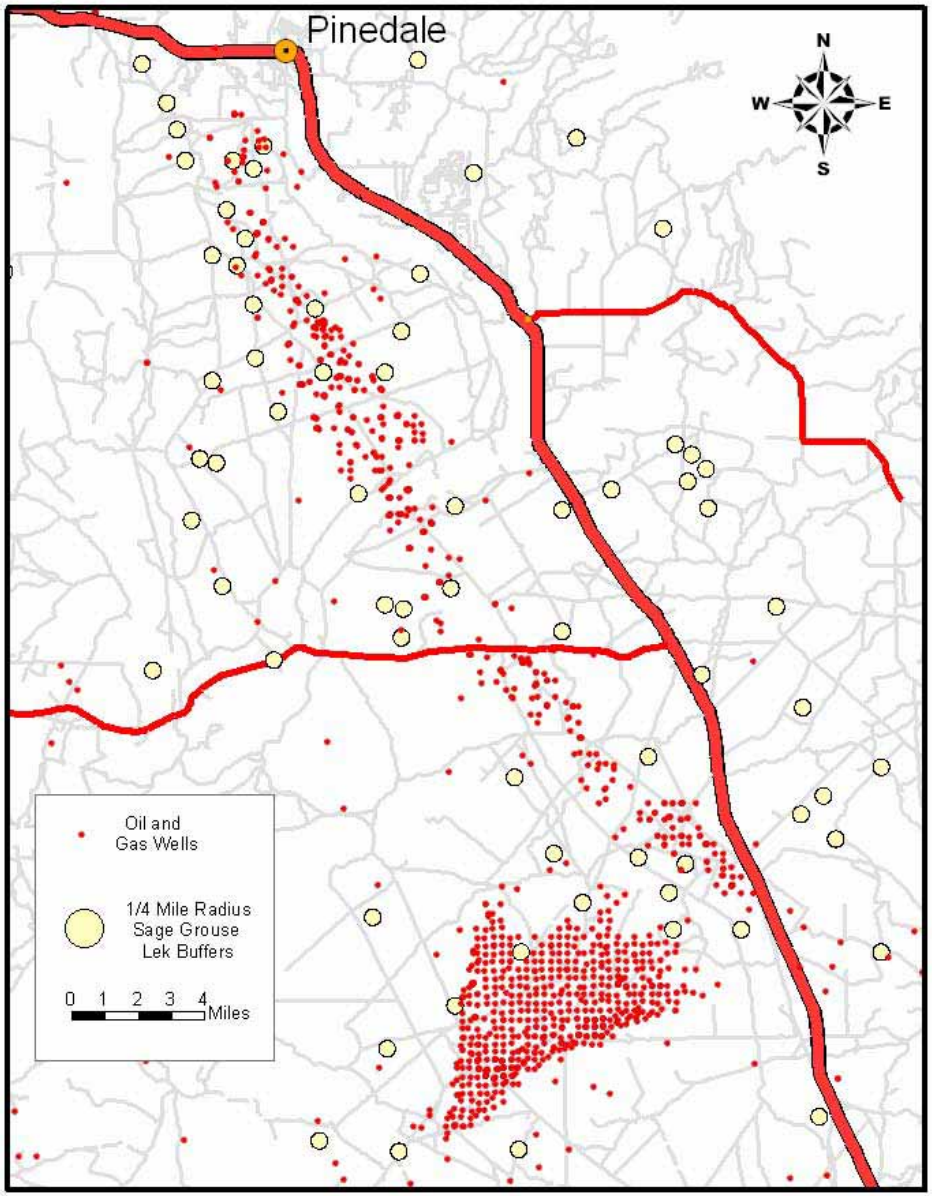
Status of the Species

The US Fish & Wildlife Service is currently in the process of conducting a status review of the Greater Sage-grouse, to determine if it should be listed as an endangered species.



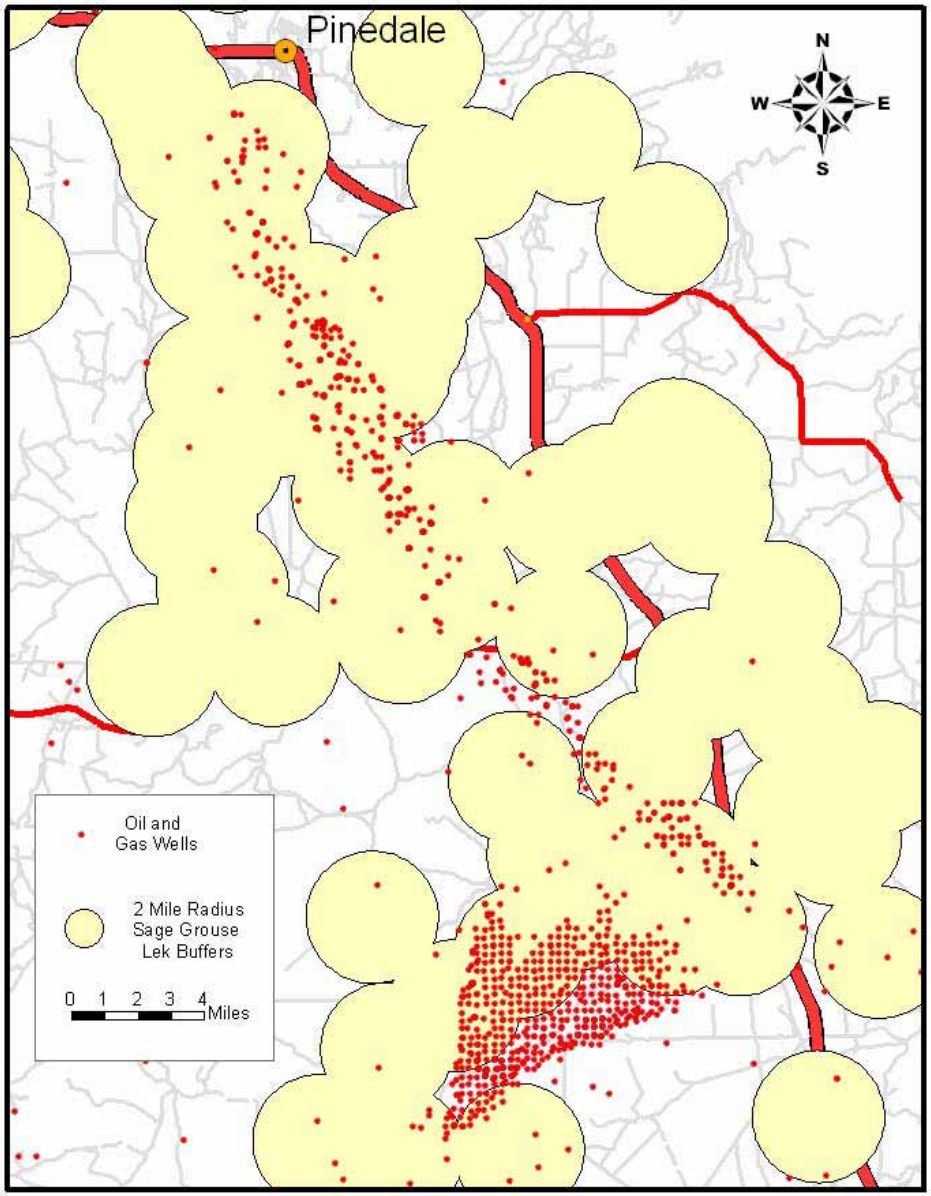
Current "No Surface Occupancy" Areas

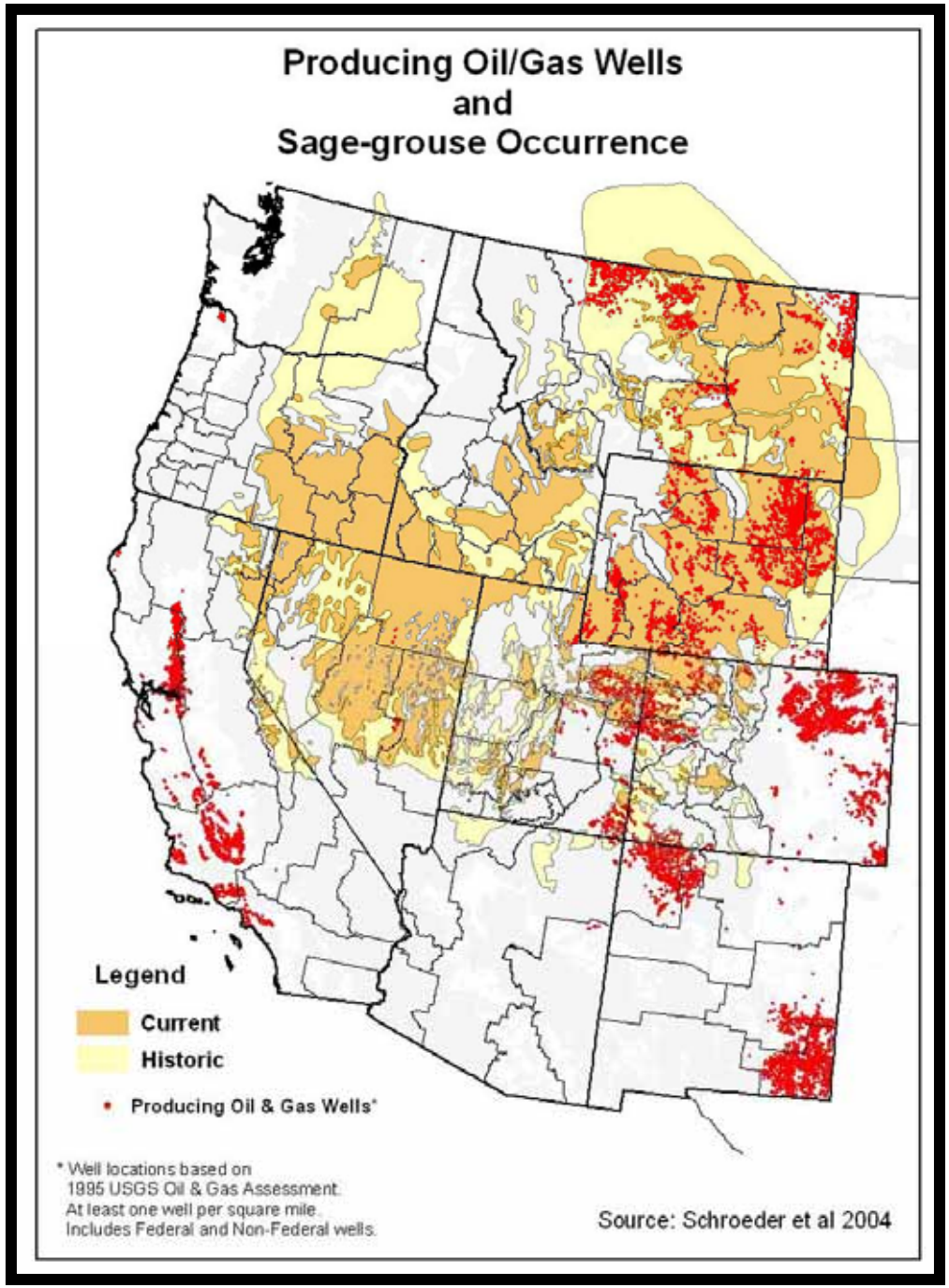
Typical ¼ Mile Radius



Potential "No Surface Occupancy" Areas

If BLM went to a 2-Mile Radius





Who may be affected if the Greater Sage-grouse is listed as an endangered species?

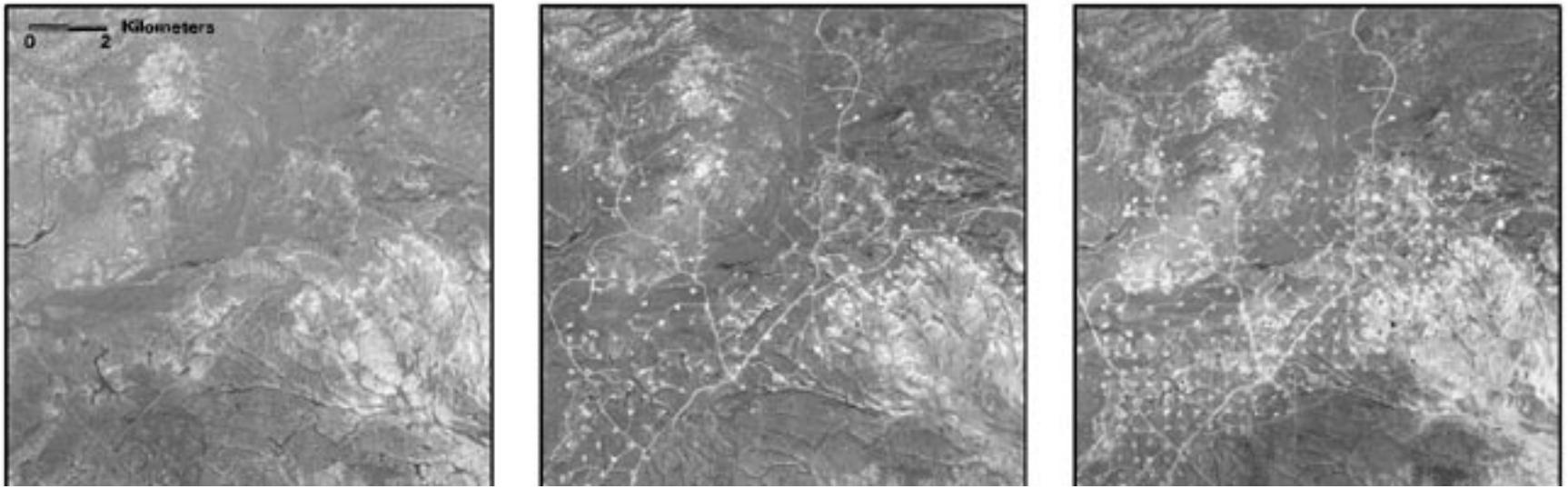
- A significant amount of energy production (as well as other uses) takes place within Sage Grouse habitat.

- Listing a species reduces flexibility, increases costs, and lengthens decision times in managing energy resources.

What Does the Public Want to See?

What the Public Sees

Increasing Development in Some Locations



1986 1999 2001

Photos by Skytruth

What the Public Sees

Oil on the Pad and in the Pit

(Private land)

(WY Outdoor Council Web Site)

Old Well Located Along a National Historic Trail

What the Public Sees

Utah Oil and Gas Leases Stir Criticism

Sensitive Wildlife Habitats Auctioned to Bush Contributors, Environmentalists Say

By Juliet Eilperin
Washington Post Staff Writer

The Bush administration has moved ahead with its plan to auction oil and gas leases on environmentally sensitive lands in Utah, reaping millions of dollars from broad swaths of lands near a national monument.

A detailed analysis of the leases auctioned to date, conducted by the Environmental Working Group, an advocacy group that opposed the leases, found that they encompass dozens of critical wildlife habitats that are now open for development. In many cases, the leases were purchased by contributors to President Bush's reelection campaign.

Although the federal government routinely auctions oil and gas leases on federal land, this series of sales represents only the second time in five years that it has done so on land it had previously determined to be wilderness quality.

"This is unprecedented," said Mike Casey, spokesman for the Environmental Working Group.

The auction has attracted the attention of more than 100 members of Congress, who wrote Interior Secretary Gale A. Norton last month asking her to hold off selling leases on tracts in areas eligible to be protected as wilderness.

The environmental group also calculated, based on federal lease sales in 2000, that the land leased to oil and gas companies in Utah would yield average revenue of $60 an acre a year, raising questions about whether the government got enough value from leases that sold for an average price of $20 an acre for the first year, with a subsequent payment of $2 an acre each year afterward.

"They're essentially giving land to people who are influential with their contributions," said Rep. Maurice D. Hinchey (D-N.Y.), who questioned Norton on the sales during an appropriations committee hearing last week. "If you put drilling rigs on it or if you build roads for it, it no longer qualifies for [wilderness] designation."

The lease sales on previously protected land in Utah began in November, after the Bush administration settled a lawsuit brought by the state seeking to overturn federal protections that the Clinton administration put on the land in 1999. Then-Utah Gov. Mike Leavitt, now administrator of the Environmental Protection Agency, struck a deal with Norton last year. The Bureau of Land Management had identified the areas as having wilderness quality but did not take the extra step of having them designated as wilderness by Congress, which would have protected them from development.

The bureau plans to auction off leases on a total of 46,000 acres by June, including the 5,000 acres leased last month.

"This epitomizes how the administration favors the interests of the oil and gas industry over every other public value of the land," said Jane Houlihan, vice president of the Environmental Working Group.

Don Banks, a spokesman for the Utah office of the Bureau of Land Management, said the administration took environmental factors into account in identifying land for auction and excluded more than half of the acreage it originally included.

"We do consider wilderness characteristics, but we do consider it on equal footing with all the other important resources we manage, including energy," Banks said. "Wilderness characteristics are valued, but they don't automatically trump all other resource uses and values."

All 14 parcels of land available were leased at the February auction, with some going for just $5 an acre.

The acreage included seven Mexican spotted owl habitats, 12 golden eagle habitats and four peregrine falcon habitats, the Environmental Working Group's analysis found. Of the plots that have been leased or are scheduled to be leased, 27 contain sensitive floodplain areas, the group said, and five plots leased in November are in areas on which oil and gas exploration could contaminate the Colorado River system.

Lease auctions this year in Utah and in Colorado have partially ringed Dinosaur National Monument, a rugged and remote area popular with river runners. That means, environmental critics said, that visitors will have to pass by oil and gas rigs to reach the park, which includes the scenic Green and Yampa river canyons.

"America's crown jewels are being shamelessly ringed by oil and gas development," said Stephen Bloch, a lawyer with the Southern Utah Wilderness Alliance.

Banks said five parcels of land around the Dinosaur Monument were excluded from the sale.

The auction was lucrative for Utah and the federal government, which split the proceeds. The auction netted more than $6 million, the most a land auction had reaped since 1988.

Four groups dominated the recent bidding: Retamco Operating Inc., a Montana-based company; Tidewater Oil & Gas Co., of Colorado; Baseline Minerals Inc., an Arizona-based company; and the Utah-based Thames River LLC.

Retamco ranked as the biggest player in the most recent auction, paying $600,000 for leases in February alone. Its chairman, Stephen Goss of Montana, gave the maximum allowable contribution of $2,000 to Bush last year, as did his wife. Retamco placed fourth in the 2002 election cycle among Montana's top donors of unregulated "soft money," giving $7,050 to Republicans.

Goss said environmentalists were overreacting in criticizing the recent leasing of Utah lands.

"You need to be able to drill on state and federal lands," Goss said. "You don't harm it that much anyway."

Goss praised the Bush administration for making his company's oil and gas exploration work possible. He described the Clinton administration—which had sought to protect the lands—as "beholden to the extreme conservationists."

Rep. Maurice D. Hinchey (D-N.Y.), right, questioned Interior Secretary Gale A. Norton last week about leases he said went to influential donors.

CORRECTIONS

A Feb. 28 article about a book on the Taliban's rule in Afghanistan said the book was unpublished. It was published in Iran last year in the Dari language.

A "For the Record" listing that appeared in the Feb. 27 Sports section advertising a one-day college exposure event for girls high school basketball players had an incorrect date. The event, put on by Blue Chip Basketball, will take place March 28 at American University.

Our Goal:

Sustainable Energy Development

Meeting the needs of the current generation, without compromising the ability of future generations to meet their needs.

To sustain energy development
we must have **public support**……
or we will lose the opportunity
to develop energy minerals on much
of the public's lands.

Key Concept:

Oil & Gas Exploration and Production is a long-term, but **not a permanent** use of the Public Land

Resources at Pre-Development:

Wildlife; Soils; Water; Air; Recreation; Visual; Vegetation; Grazing; etc.

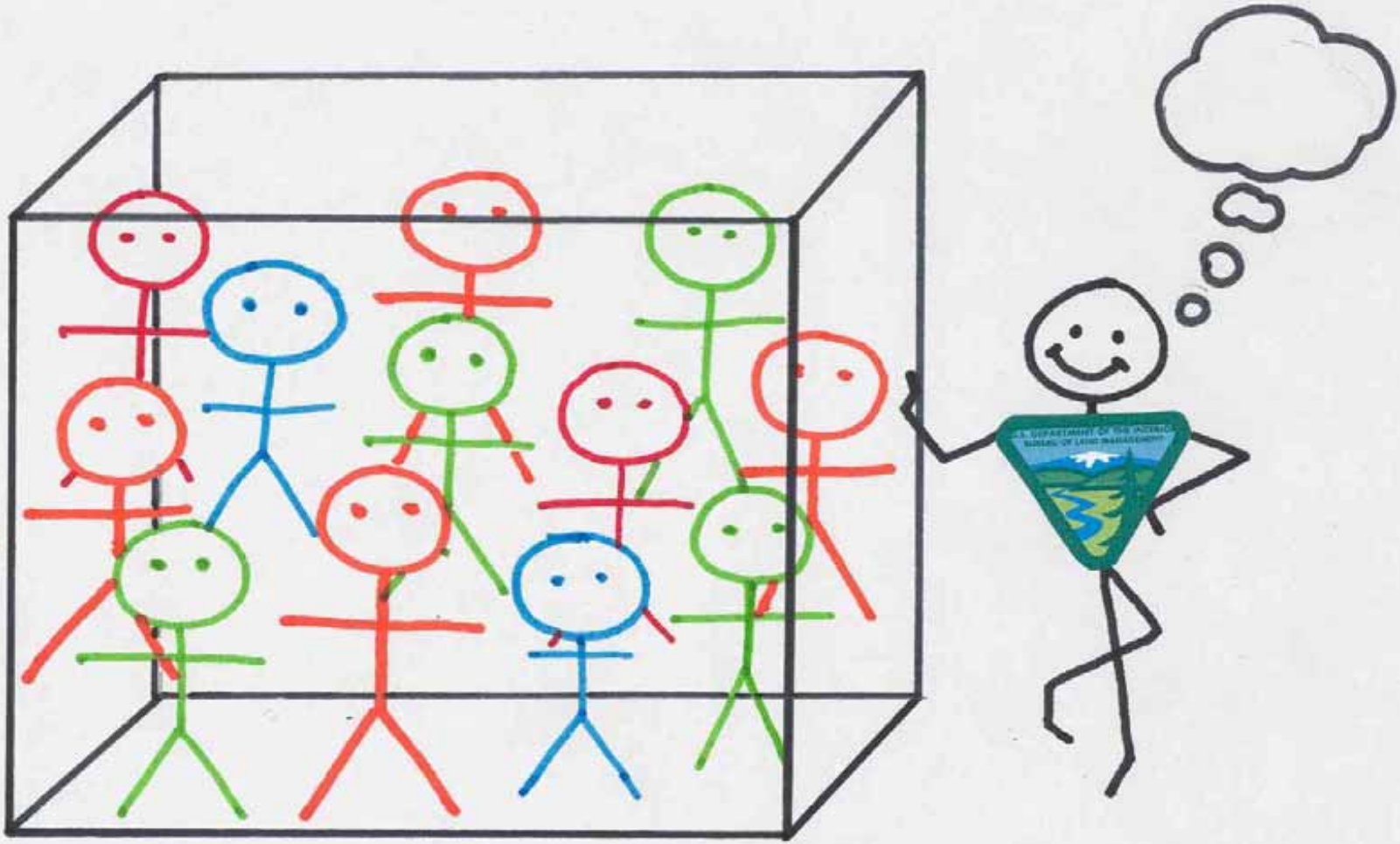
Resources at Energy Development Phase:

Energy; Wildlife; Soils; Water; Air; Recreation; Visual; Vegetation; Grazing; etc.

Resources at Field Reclamation Phase:

Wildlife; Soils; Water; Air; Recreation; Visual; Vegetation; Grazing; etc.

(Over time, nearly all traces of energy development should be erased.)



THE BOX YOU

Yet, always taking into account what is reasonable, necessary, and effective.

THE SOLUTION

Best Management Practices (BMPs)

"Improved Actions for Achieving Improved Results"

Siting or Location - Behind the Hill or Ridge	Color Selection - Blend with Background, Juniper Green*	Reducing Unnecessary Disturbance – Roads and pads
Interim Reclamation - Up to the Wellhead	Plans of Development (PODs)	Reduce Traffic – Centralized Production Facilities
Reclamation - Original Contour	Siting - Non-Linear Roads following the topography	Wastes and Spills – Bioremediation

The Fine Print: A BMP suitable for use in one area, may not be suitable in the next. It is not "one size fits all." It is the best practice to meet the needs of the situation.

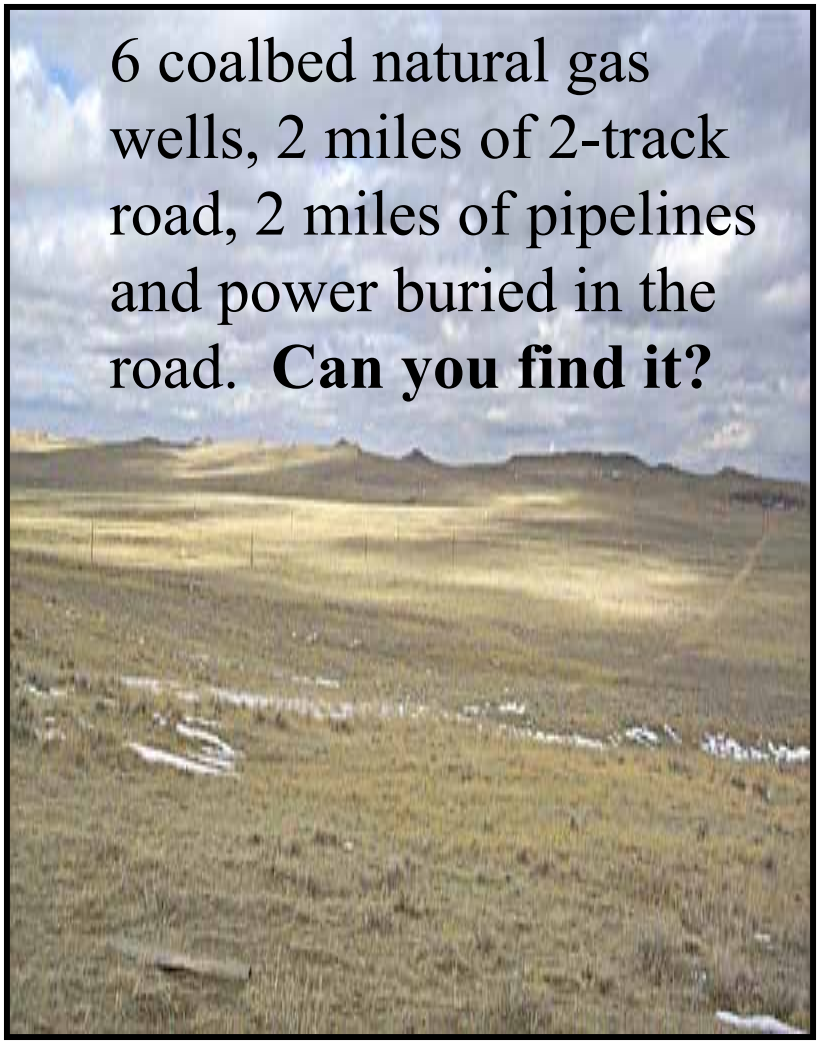
Why BMPs?

- **History:** Successful Use in Many BLM Offices.
- **Protect:** Wildlife Habitat, Forage, Water, Scenery.
- **Land Health Standards:** Found in all BLM Land Use Plans.
- **Minimal:** Cost or Even Cost Savings. Small Portion of the Cost of Drilling A Well.
- **Public Concerns:** Result in Increased Comments, Protests, Appeals, & Litigation.
- **It is the Right Thing to Do!**

This eagle was electrocuted because a raptor perch avoidance BMP was not used.

Traditional Development vs. BMP Development?

Both Photos Represent Extremes – Yet we can learn much from the photo on the right.



Objective: To Minimize the Footprint of Oil and Gas Operations

How Do We Get There?

- Good Science; Experience; Baseline Inventories; Monitoring; Follow-up Adjustments.
- Land Use Planning Lease Stipulations.
- **Early Coordination between BLM and the Operator**.
  - Pre-Development Planning
  - Sensitive Area Avoidance
  - Minimizing Impacts
  - Best Management Practices
- **BLM Receives Outstanding APDs Containing BMPs!**
  As a Result: NEPA Simplified.
- Necessary BMPs Not Included within the APD can be attached to it as COAs.

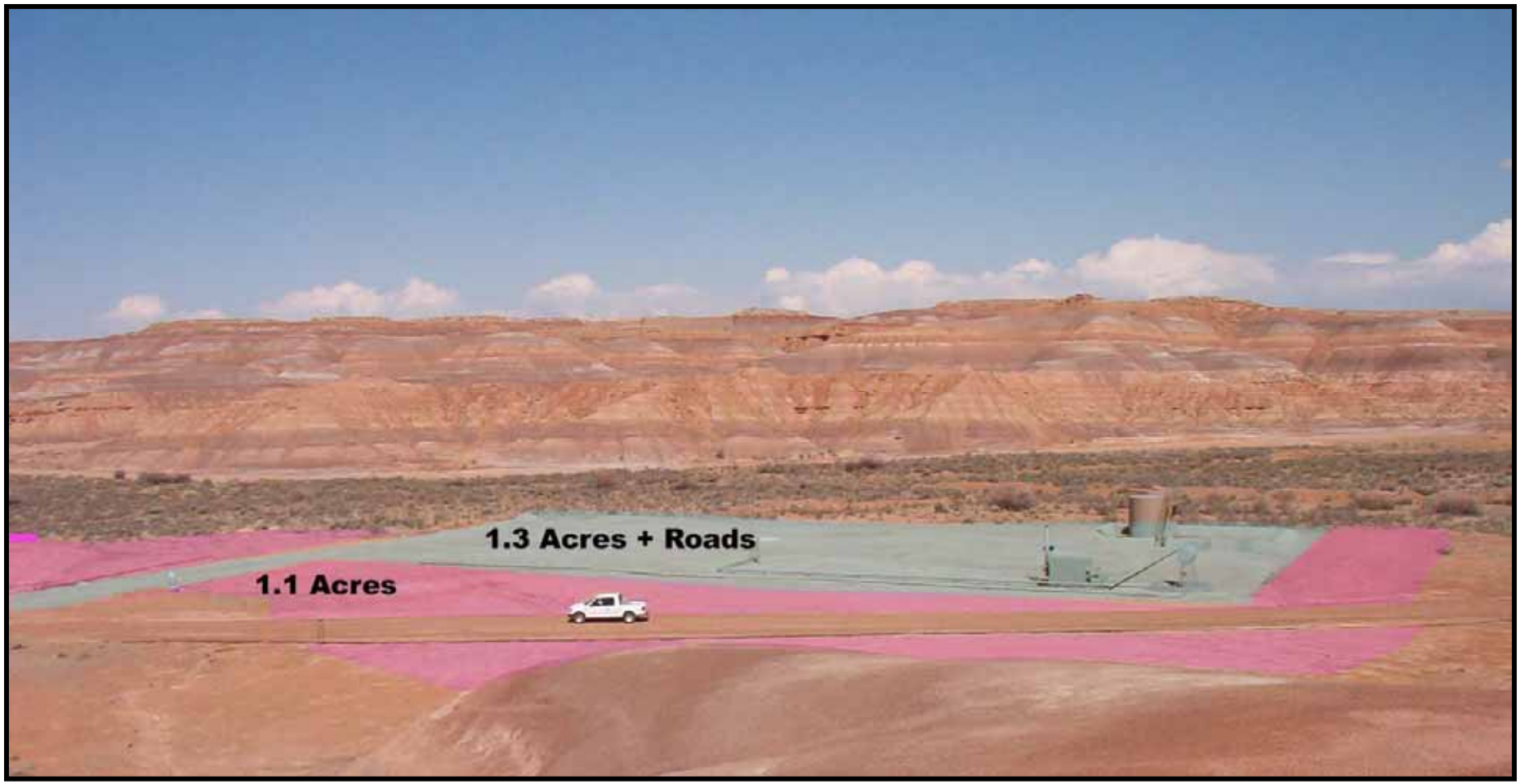
APDs = Applications for Permit to Drill
COAs = Conditions of Approval

Use BMPs to: **Minimize Wildlife Habitat Fragmentation**

Typical BMPs May Include:

- Minimizing Roads, Utilities, & Well Pads
- Drilling Multiple Wells from a Single Well Pad
- Interim Reclamation
- Reducing Noise
- Remote Production Monitoring
- Centralized Production Facilities

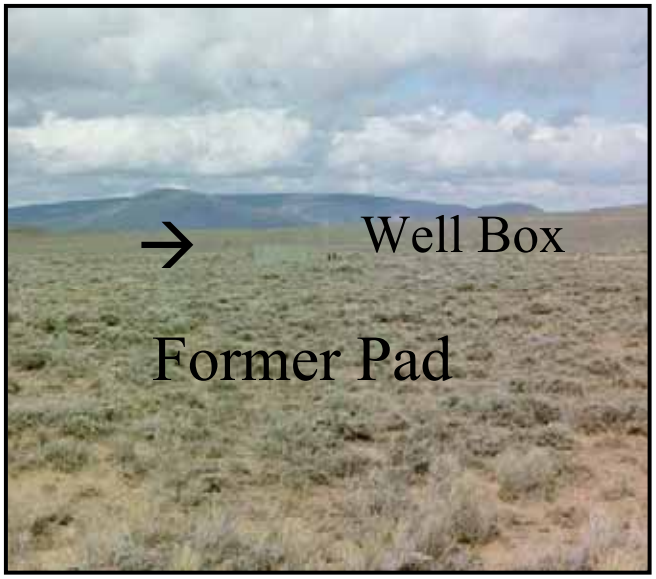
Interim Reclamation



Why Stop at 1.3 Acres?!? Go beyond 50%

Interim Reclamation

Reduce the loss of habitat and forage during the life of the well. (The workover rig can set up on the revegetated area.)



Steps:

1. Fully Recontour Unneeded Areas;

2. Respread Topsoil Over Entire Pad;

3. Revegetate to Reestablish Habitat

Interim Reclamation

<u>Good</u>…
Vegetation Reestablishing
on Pad

Seeded and Growing

Unrevegetated Bare Ground

<u>Not so Good</u>…
Bare Ground.
Long-term
Loss of Habitat
And Forage

Minimize Roads

The Standard Road

Improved Road, With Interim Reclamation!

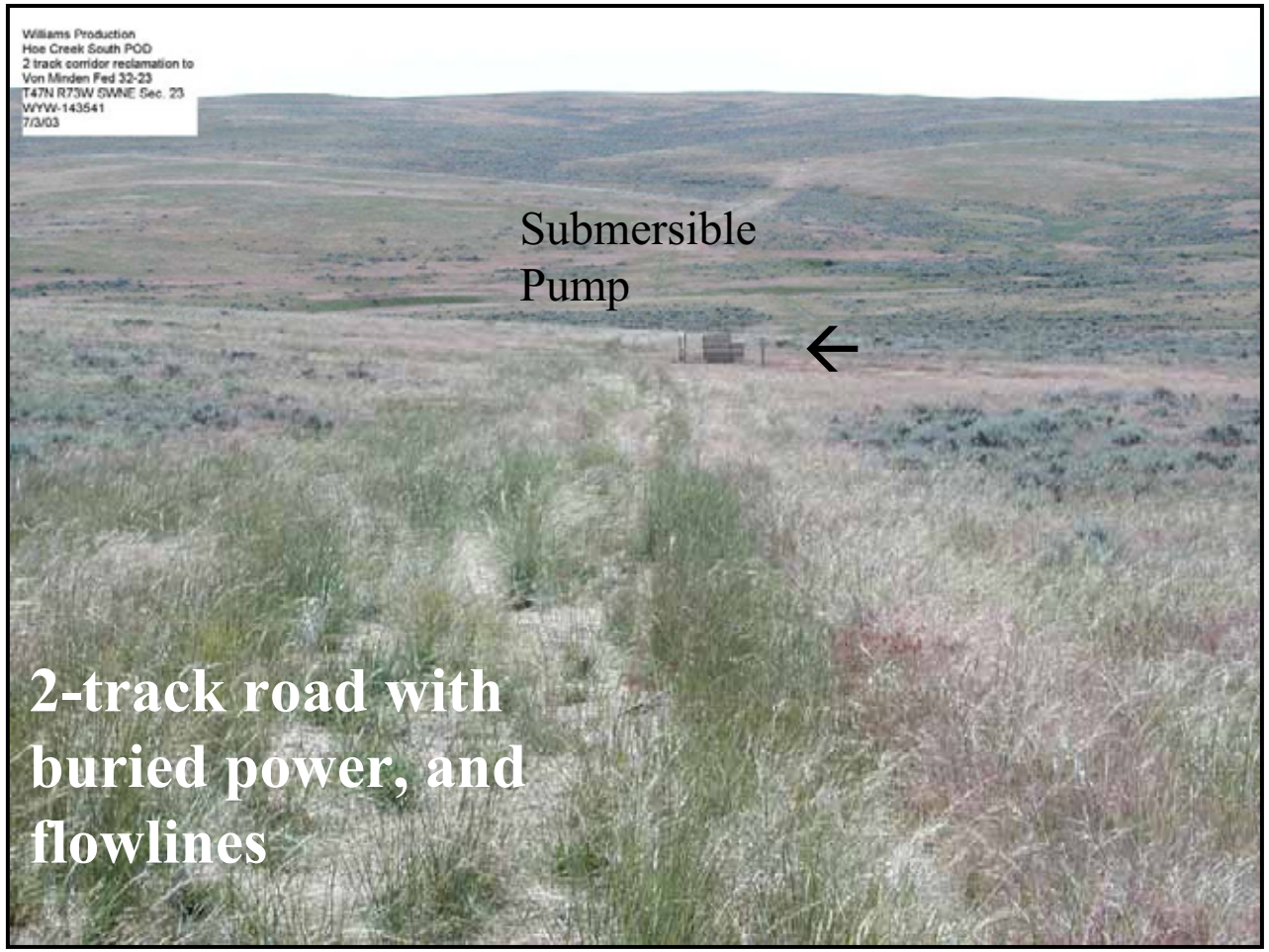
Reduce your loss of vegetation and soil.

Minimize Roads

BLM 9113 Manual - Bureau roads must be designed to an appropriate standard no higher than necessary to accommodate their intended functions…

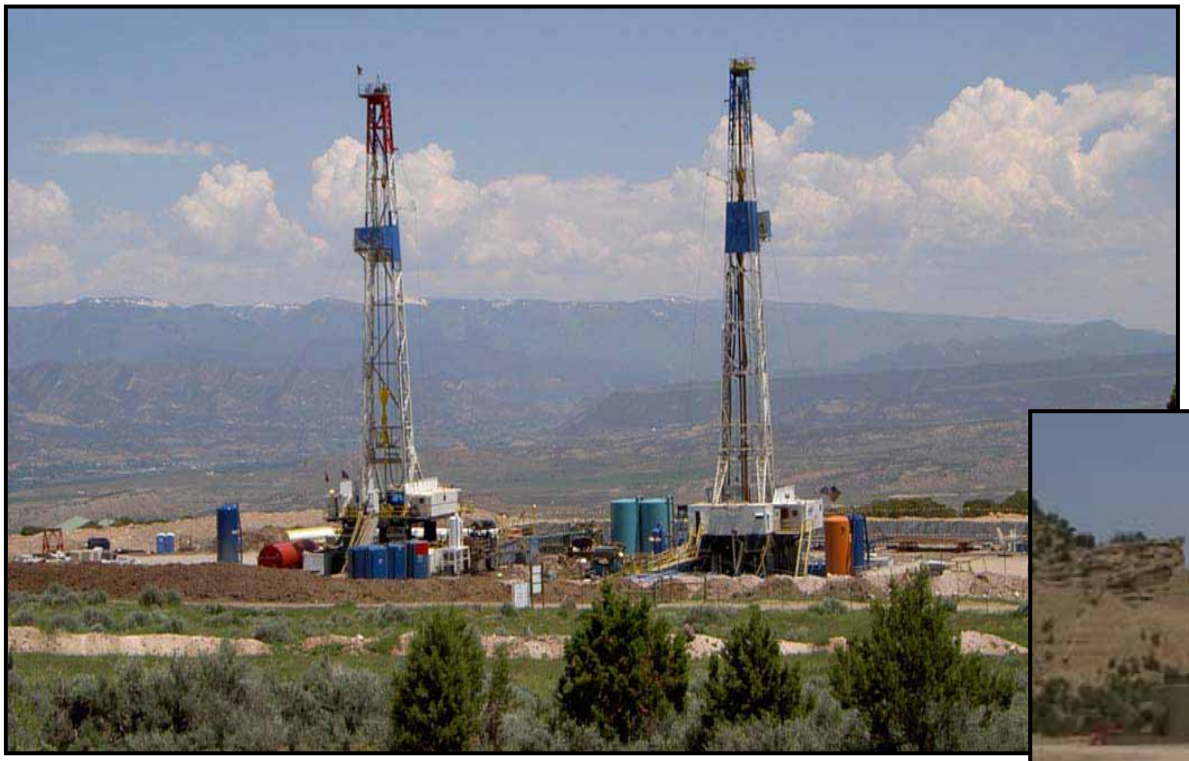
In some cases,
2-track roads are suitable and create the least disturbance to habitat.

Consider:
Average Daily Traffic load, soils, topography, weather, season of use, Safety, etc...



Drilling Multiple Wells On an Individual Well Pad

Drilling 10 Wells on 1 Well Pad….



…instead of creating 10 Well Pads, 10 Roads, 10 Powerlines, etc…

- **The feasibility of directional drilling is dependent on the subsurface geology and the depth of the hole.**

- **Directional drilling costs are typically greater.**

Centralized Tank Batteries

Run flow lines to centralized tank batteries placed offsite.

- **Result:** Greatly reduced truck traffic to individual wells.

Remote Monitoring

Utilities

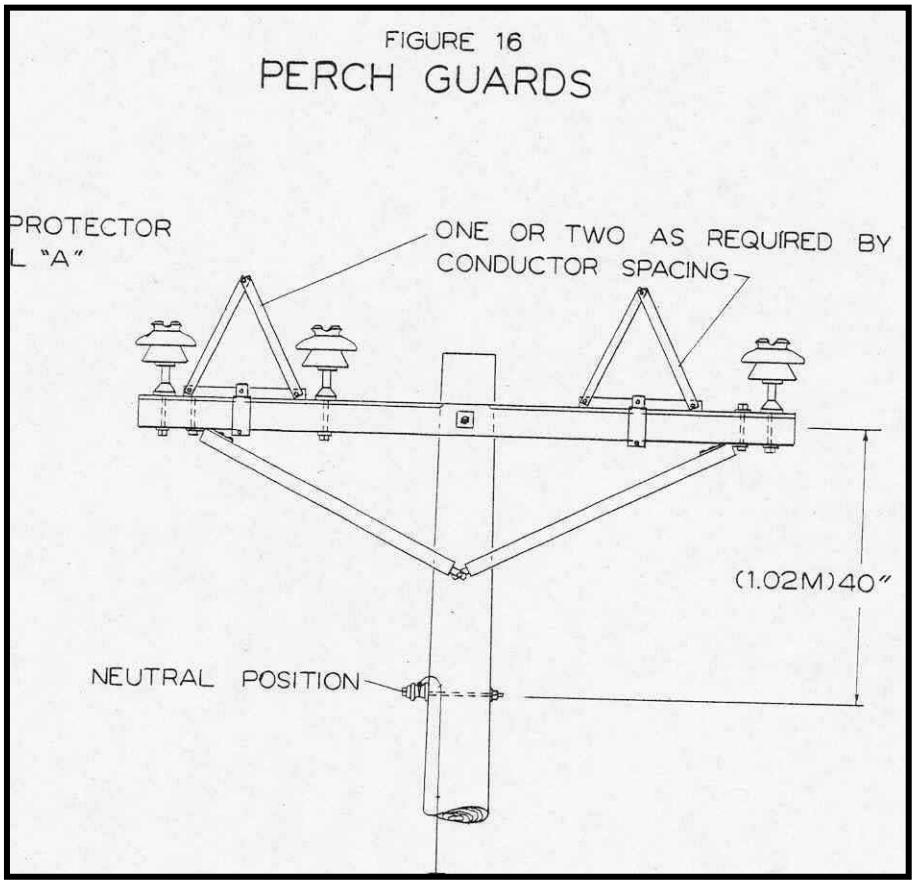
Bury Power Lines in or Adjacent to the Road.

Cross-country
Vegetation
Clearing
Fragments Habitat.

Raptor-Proof Utilities

In Sage-grouse Habitat and Prairie Dog Towns….

Modify New and Existing Power Poles to Prevent Raptor Perching

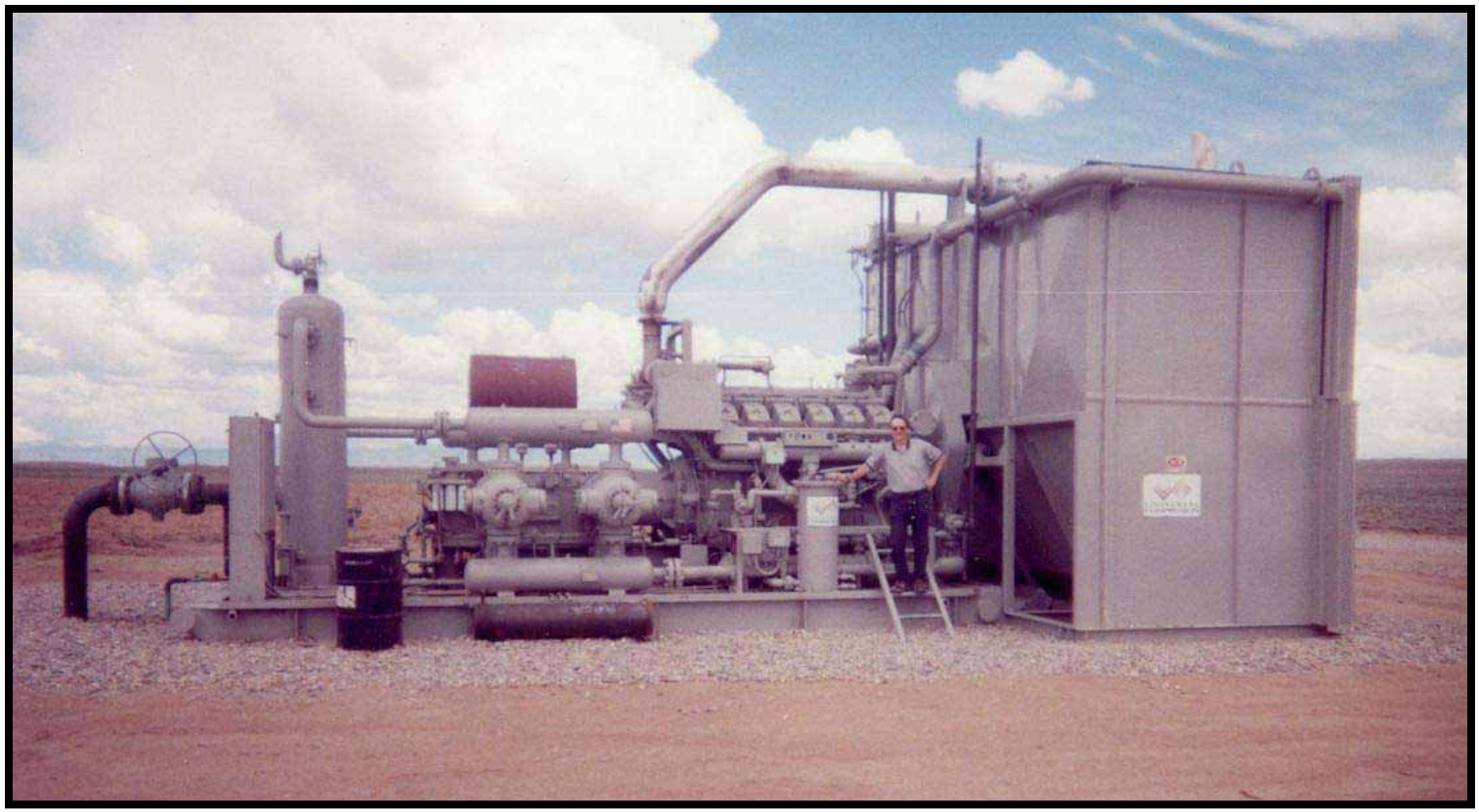


Or….Consider Burying Power

Minimize Noise

Noise can deter wildlife from using an area.

- Use mufflers and consider using berms, walls, and/or distance to reduce sound.



Can you hear me now?

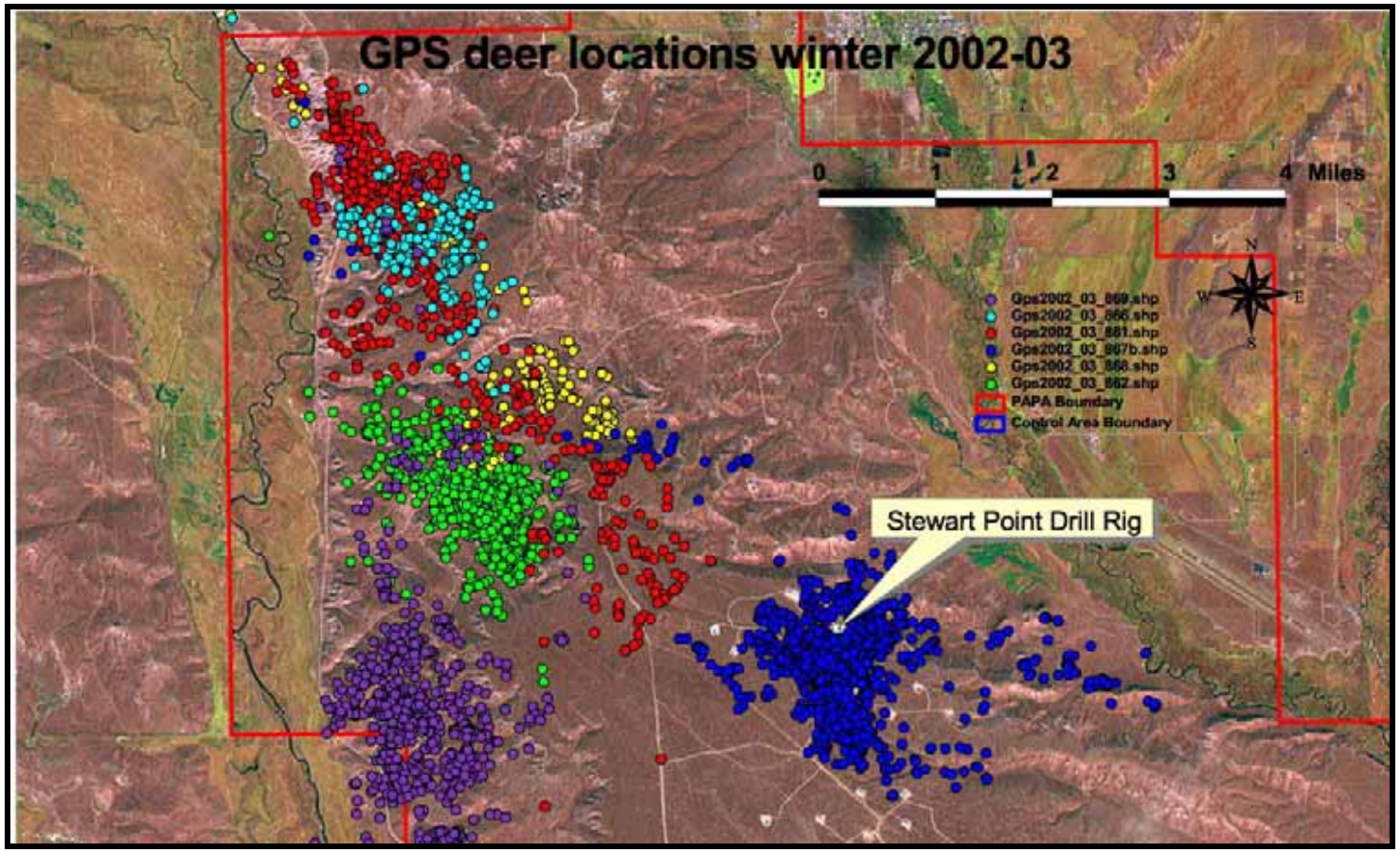
Bird Trap? This is Unacceptable.

Oil in the Pit and Net is Down

Maintenance of BMPs is Critical

Wildlife Monitoring

Example: Monitoring deer populations within winter range during drilling operations.

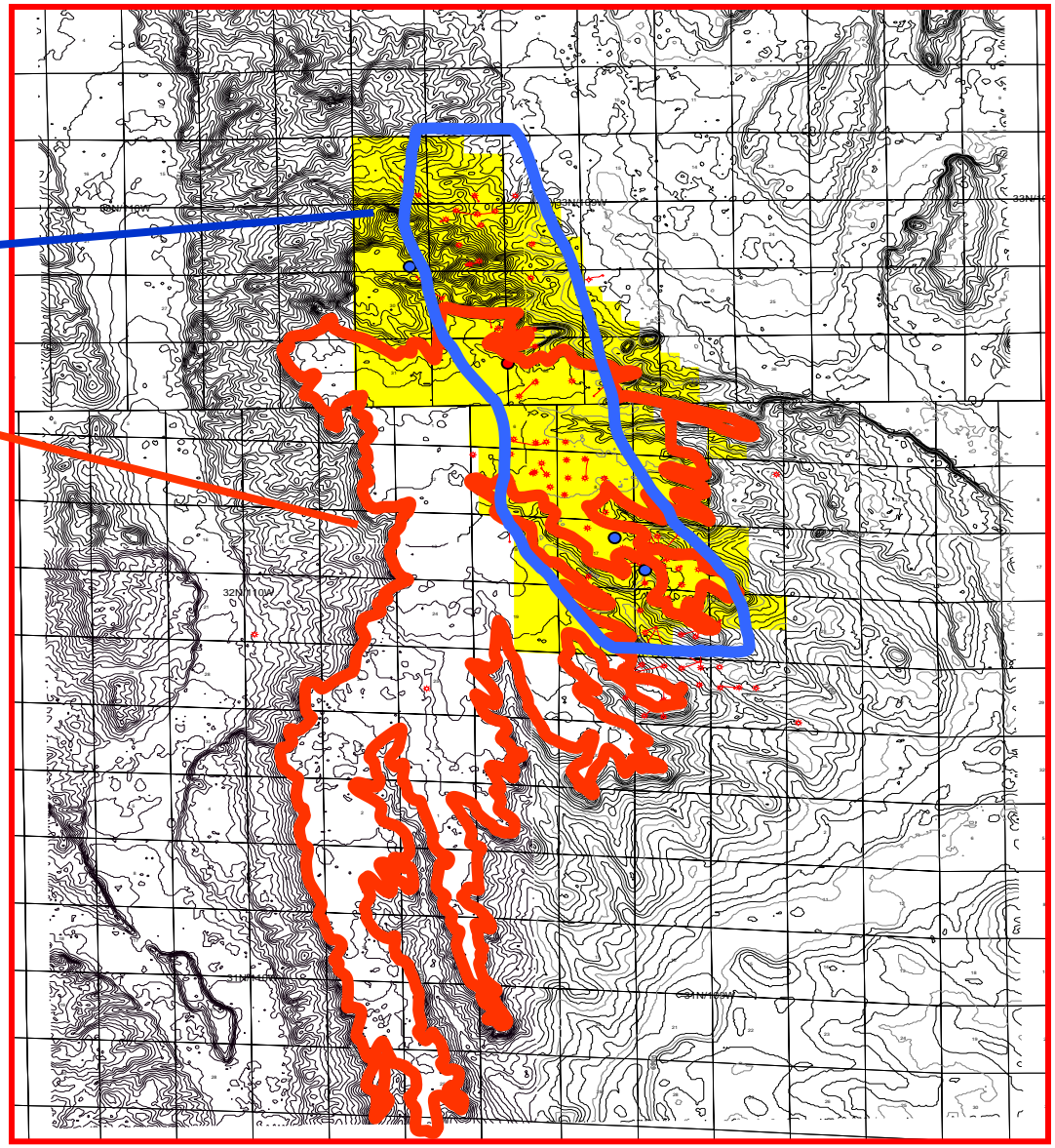


Each dot represents one deer in a small herd, 3 times per day.

Habitat Mitigation

Productive Energy Area

Potential habitat mitigation area



In Important Wildlife Areas:
Seasonal Restriction of Public Vehicular Access in New Development Areas

Consider: Shuttle vans and buses for drilling rig workers.

Final Reclamation Monitoring

Ensure the site is recontoured, stable, and fully revegetated.
If reclaimed correctly, over time the native habitat will restore itself.

In Summary:
Minimize the Footprint of Development

Consider lower standard roads, smaller pads, intermediate reclamation.

Use BMPs to Enhance: **Visual Resource Management**

Typical BMPs May Include:

- Repeating Elements of Form, Line, Color, & Texture in the Landscape to Reduce Contrast
- Proper Siting or Location of Roads & Well Pads
- Vegetative Manipulation
- Proper Selection of Structures
- Reducing Unnecessary Disturbance
- Reclamation/Restoration

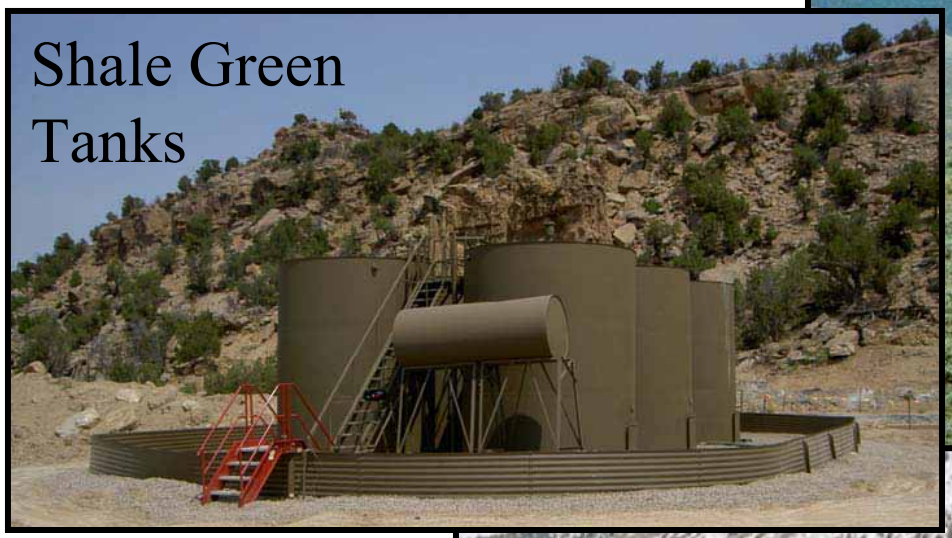
Color Selection

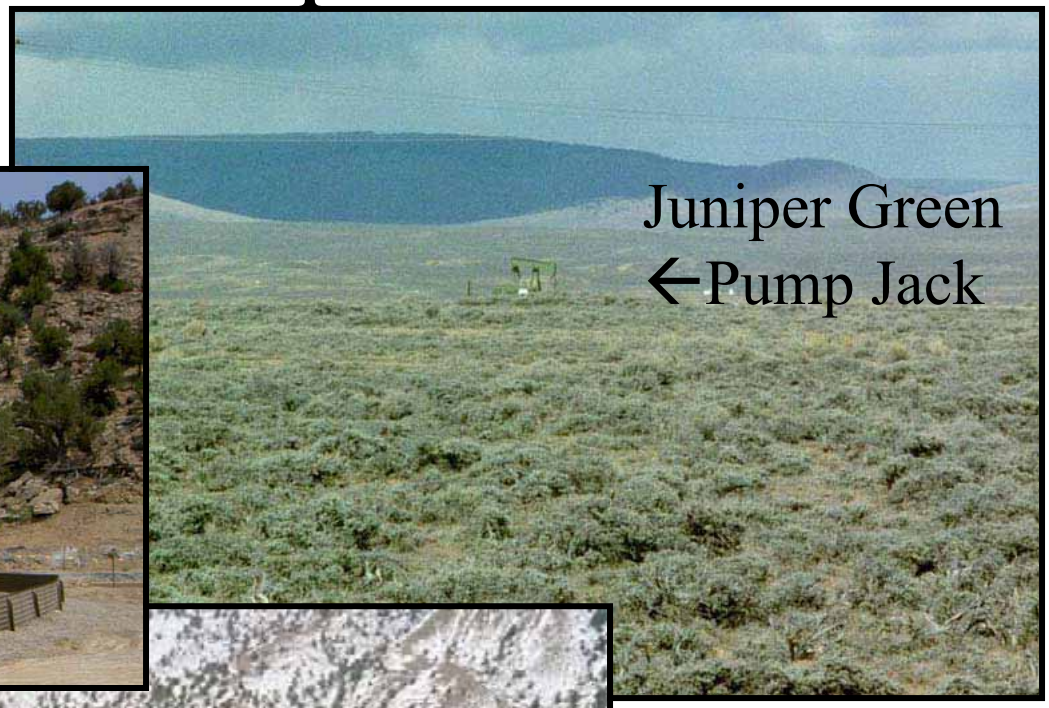
Goal: Minimize the visual **CONTRAST** with the surrounding landscape.

Typical "**Desert Tan**" facilities stand out in sharp contrast to the vegetated background, even with dormant vegetation.

Right color – Wrong Shade?

Repeat Landscape Color



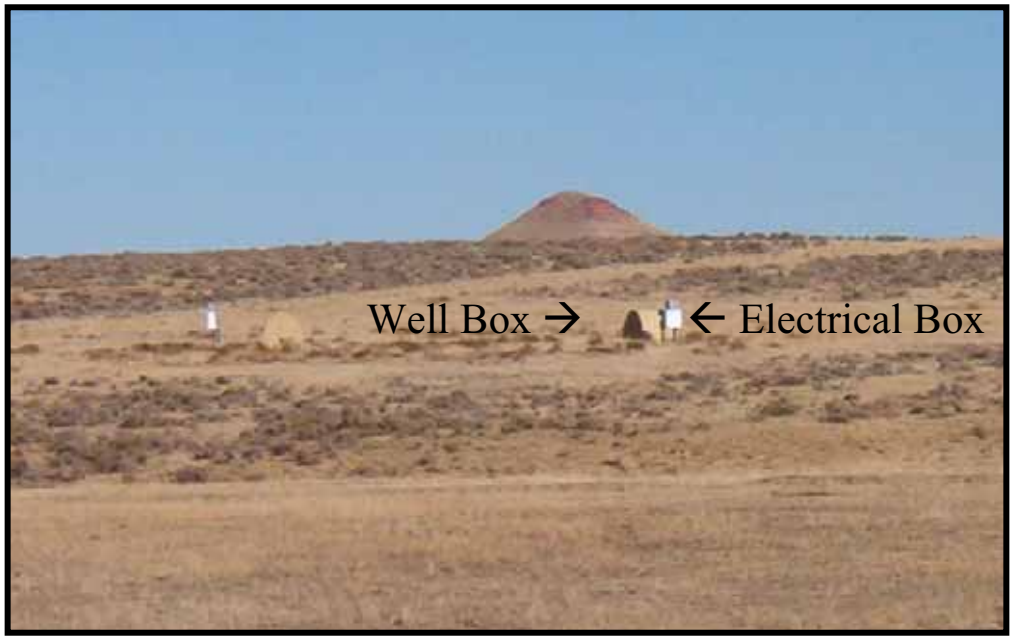


*However, working safety edges may have to be painted orange.

Dark, Juniper Green Pump Jack Partially Screened By Trees

Color Uniformity

Paint everything on the site the same color.



Lighter surfaces usually contrast and are highly noticeable.

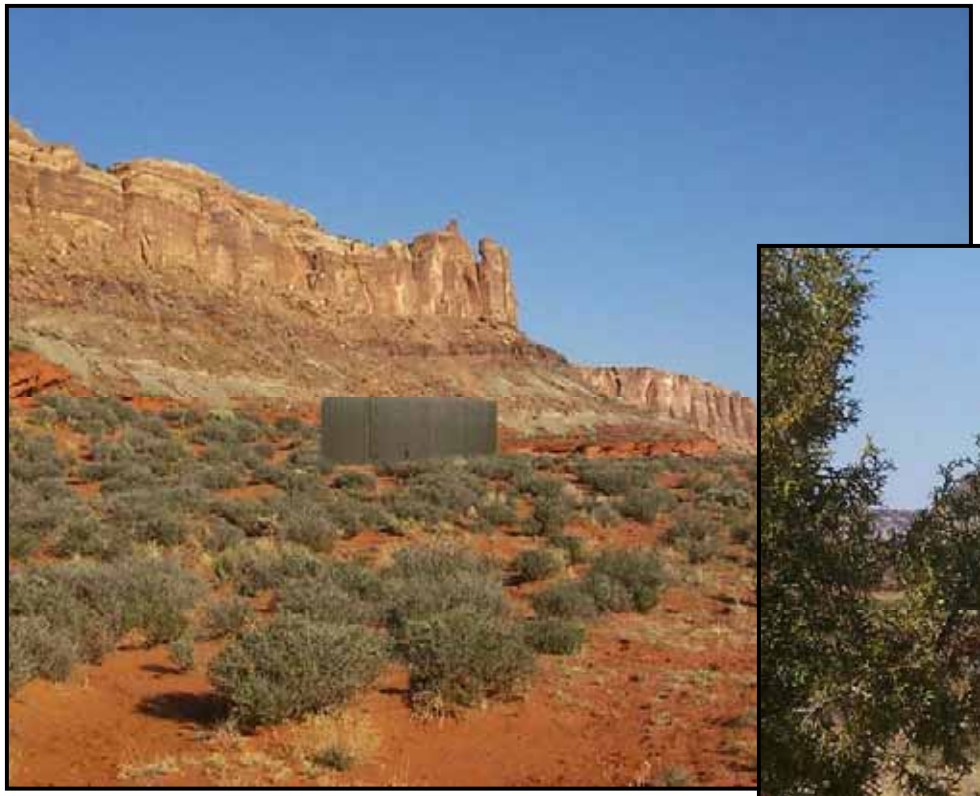
Standard Environmental Colors

The "Standard Environmental Color Chart" is merely a starting point.

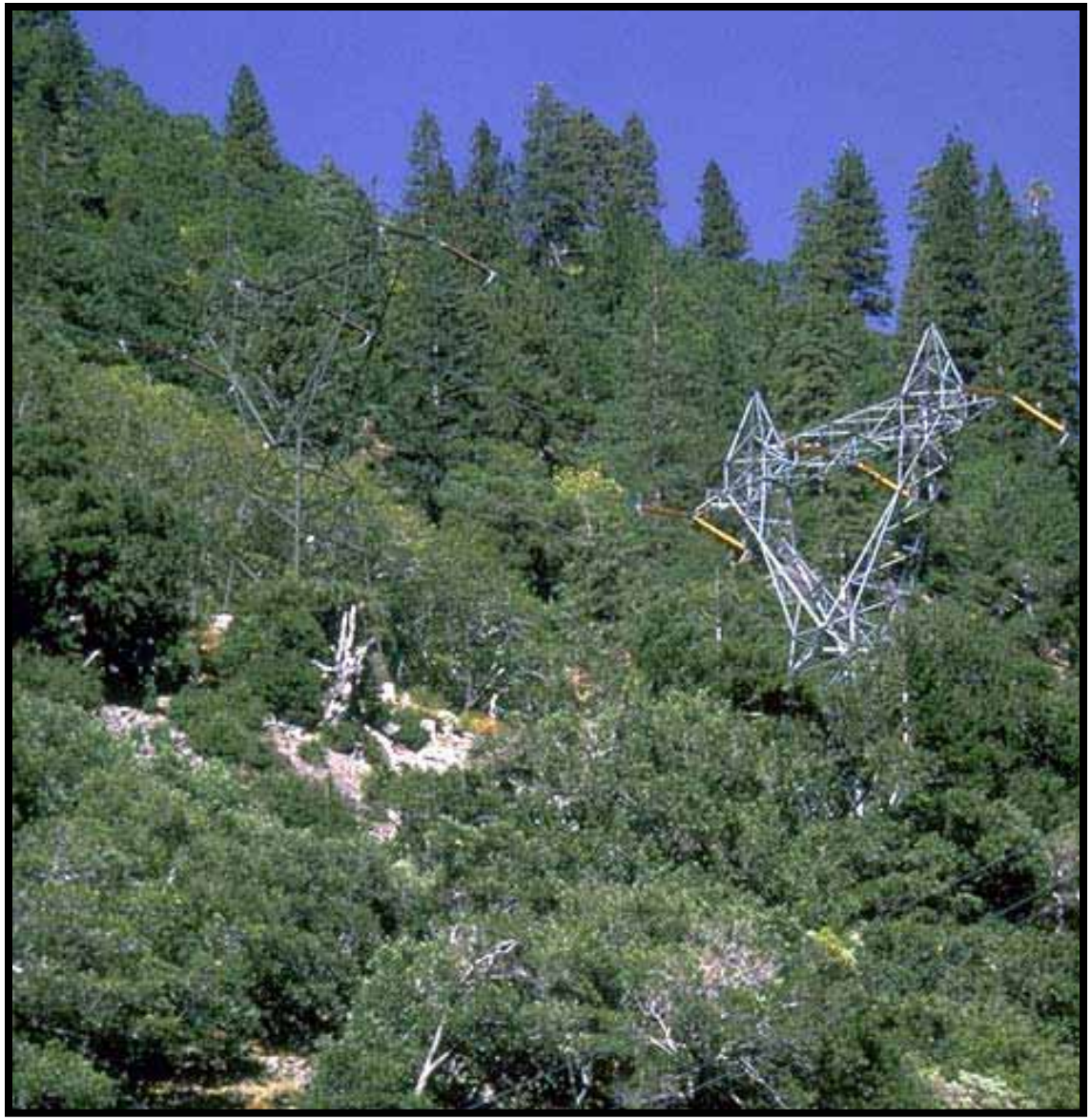
Experiment to find the best colors for blending facilities with the background.

Photo Simulations

Use Simulations in:
Public Meetings, Environmental Analysis, Planning



Simulated Tanks

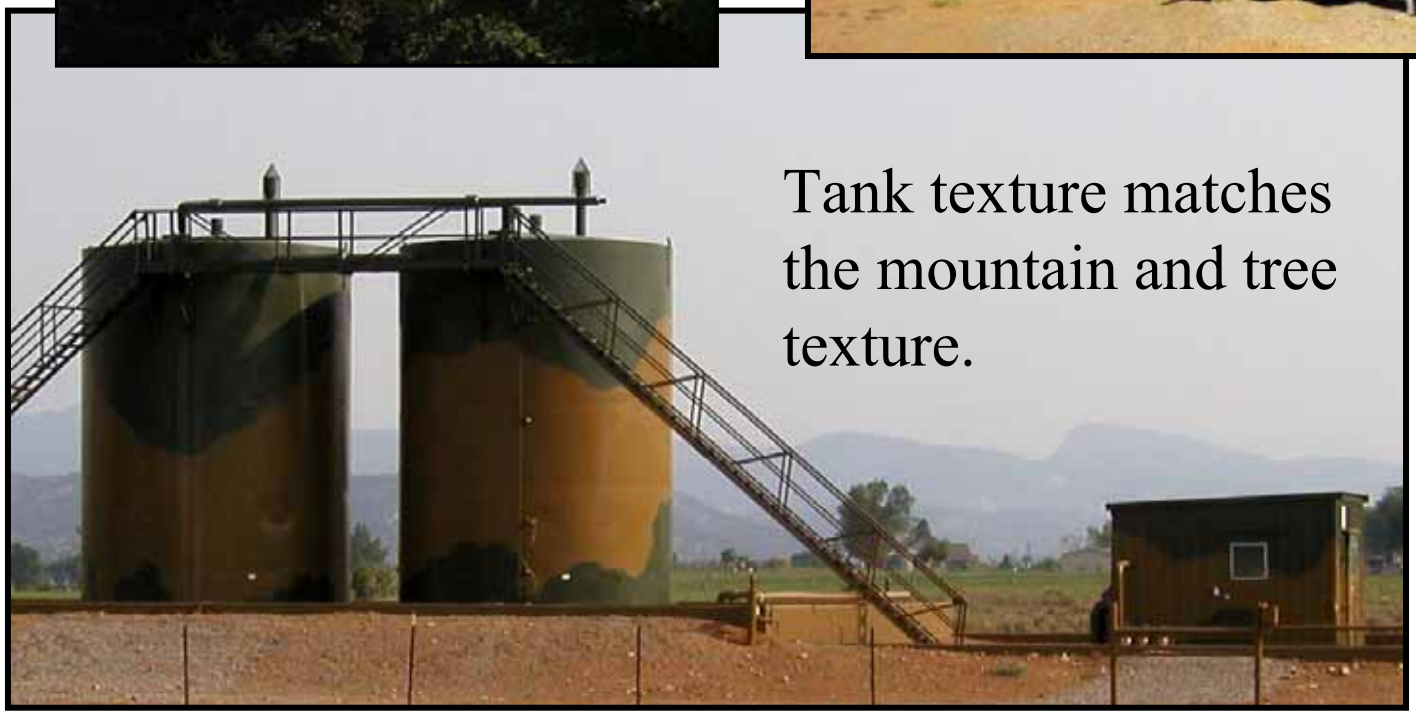


The Difference Color Can Make

There are
two towers.

Find the
“Juniper Green”
tower.

Repeat Landscape Texture



Tank texture matches the mountain and tree texture.

Repeat Vegetation Patterns

←Visible Rectangle
To reduce contrast,
location could be reshaped,
edges roughened,
and site revegetated.

Irregular Shape →
Well location
shape matches shape of
surrounding open areas.

Well Locations:
Reduce Unnecessary Disturbance

Avoid unnecessary sidecast of material.

Roads:
Reduce Unnecessary Disturbance

- Avoid locating roads on steep slopes.
- Follow the contours of the land to reduce disturbance.

Highly visible linear disturbance with large cut and fill slopes.

Roads:
Follow the Contour of the Land

Roads: Location & Mitigation

- Reuse an old road or pad if possible, but only if it is in a **safe** and environmentally sound location.
- If you create a new road, recontour and revegetate the old road it replaces.

Duplicate roads.

The old road was never properly reclaimed.

Avoid Large Pads on Steep Slopes

Placement of well pad in valley bottom avoids steep slopes.

Avoid Ridgtops and Hilltops

- Skylined features tend to stand out & draw attention.

Tall Tanks on Ridgeline

Screening and Siting Structures

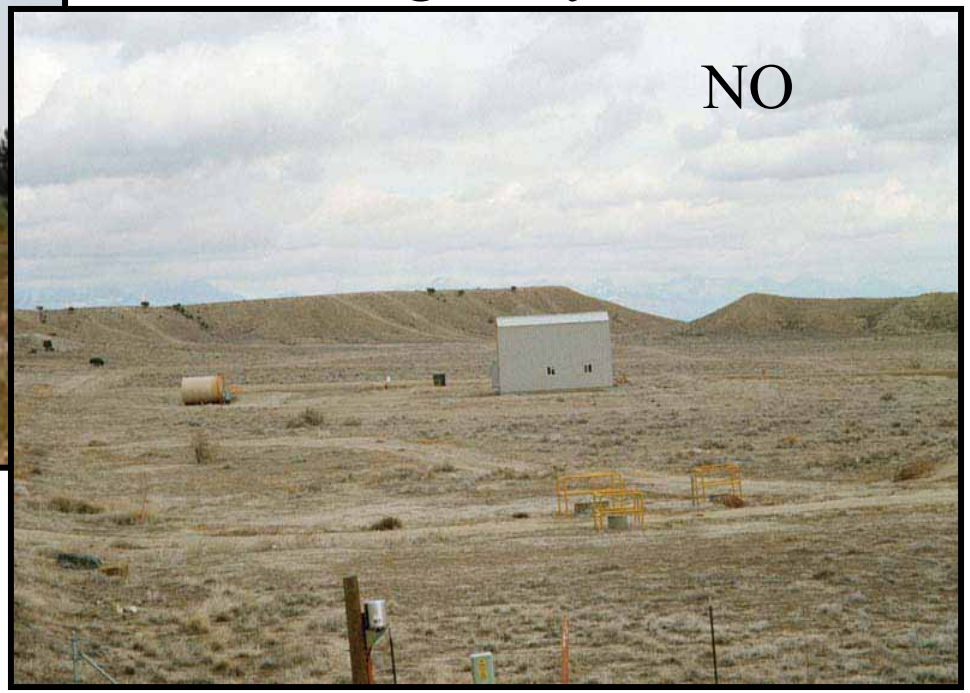
Behind Vegetation

In a Swale

Disguising Structures

Natural Gas Compressor in a High Value Suburban Area

Attempt to Hide a Pump Jack Along a Scenic State Highway



Bury Flowlines & Pipelines

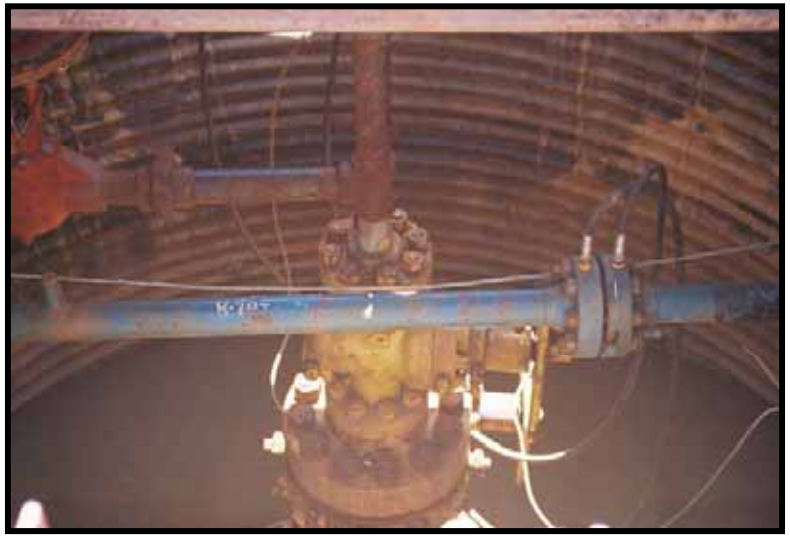
•In visually sensitive areas, flowlines and pipelines should be buried, preferably **in or adjacent to the roadway**.

Low Structures

Submersible Pump

Low-Profile Tanks in a low area, (not on the ridgeline).

Ultra-Low Structures



Buried Wellhead

Housekeeping

Remove Trash, Junk, and Other Materials not in Current Use

Well Location

Unfinished Reclamation

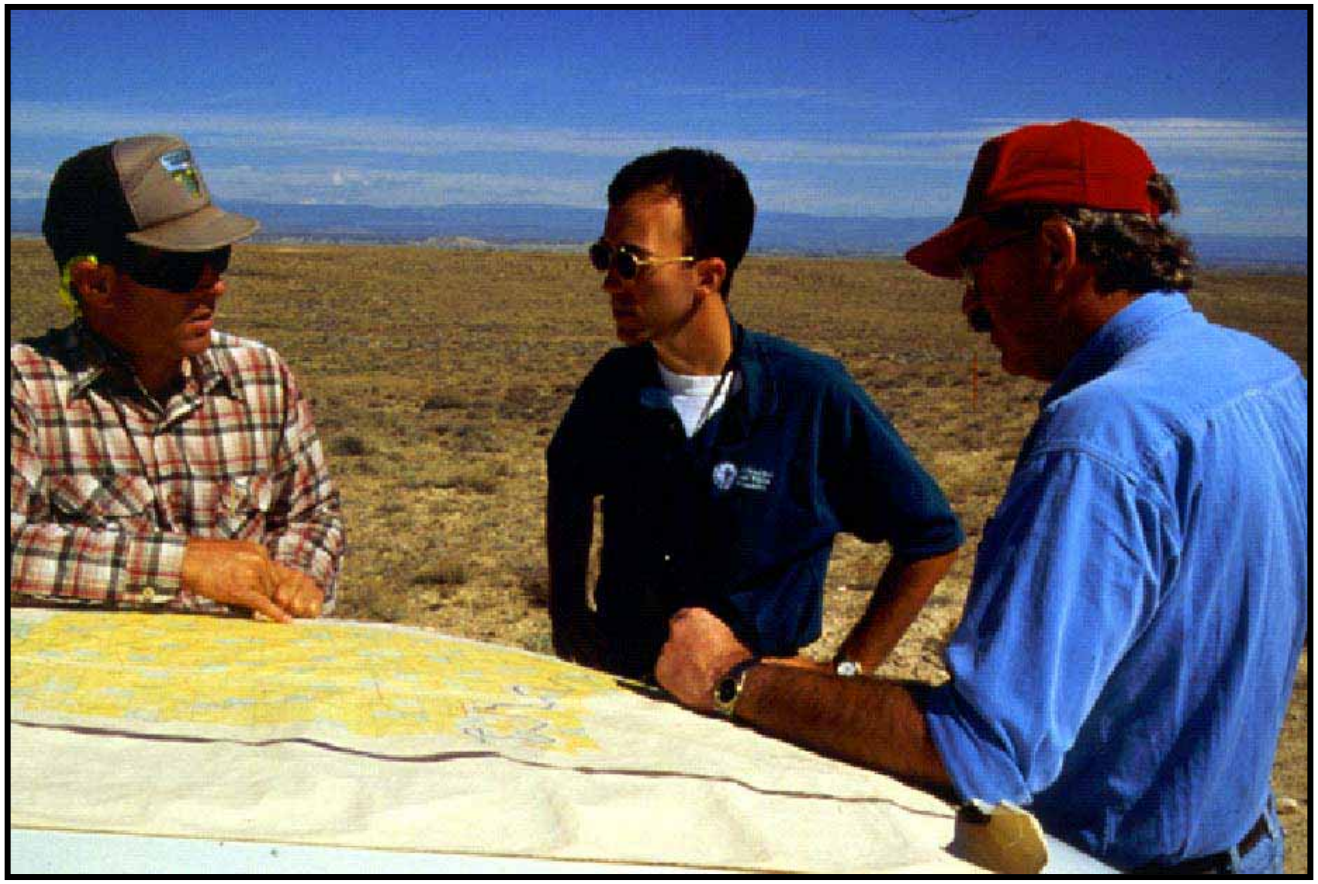
It may have some vegetation on it, but left unreclaimed, you will <u>always</u> **see** the change to the landform and vegetation.

Use BMPs to Enhance: **Construction, Operations, & Reclamation**

Typical BMPs May Include:

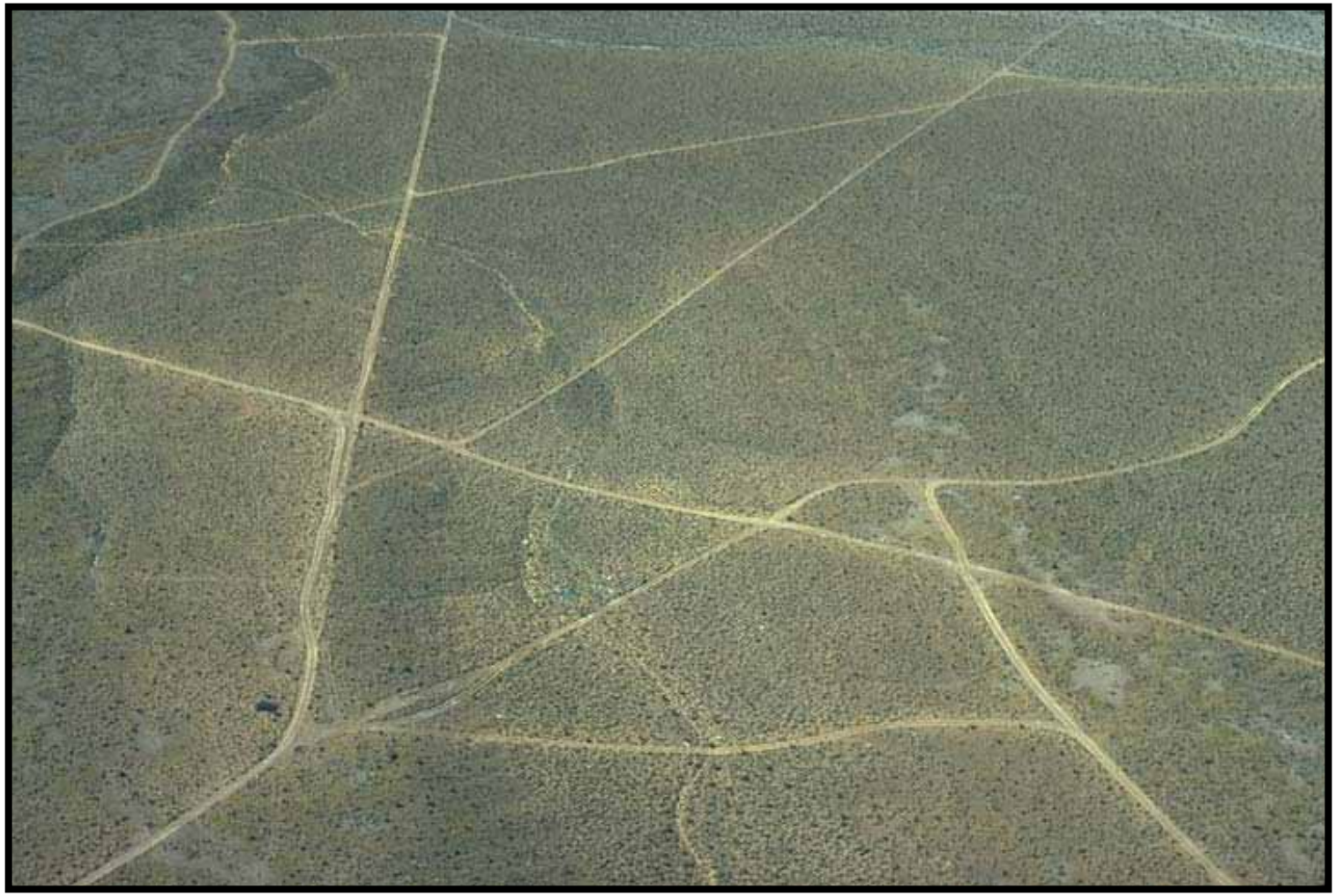
- Pre-Permitting Meetings with the Operator
- Proper Waste Management
- Proper Construction Techniques
- Full Site Reclamation at the Final Abandonment Stage

Meet With The Operator Before the Permit Application is Filed



Planning With the Operator

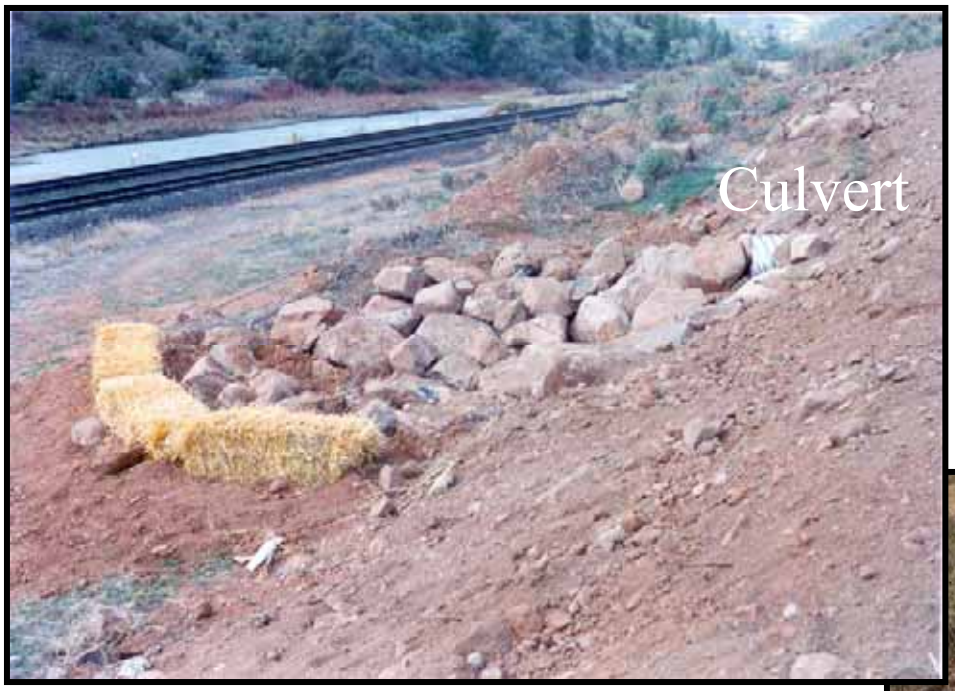
Planned Development can reduce unnecessary disturbance.



Minimize Pad Excavation

In some circumstances you can mow the well location, park on the grass, and need only excavate topsoil for rig and pit placement.

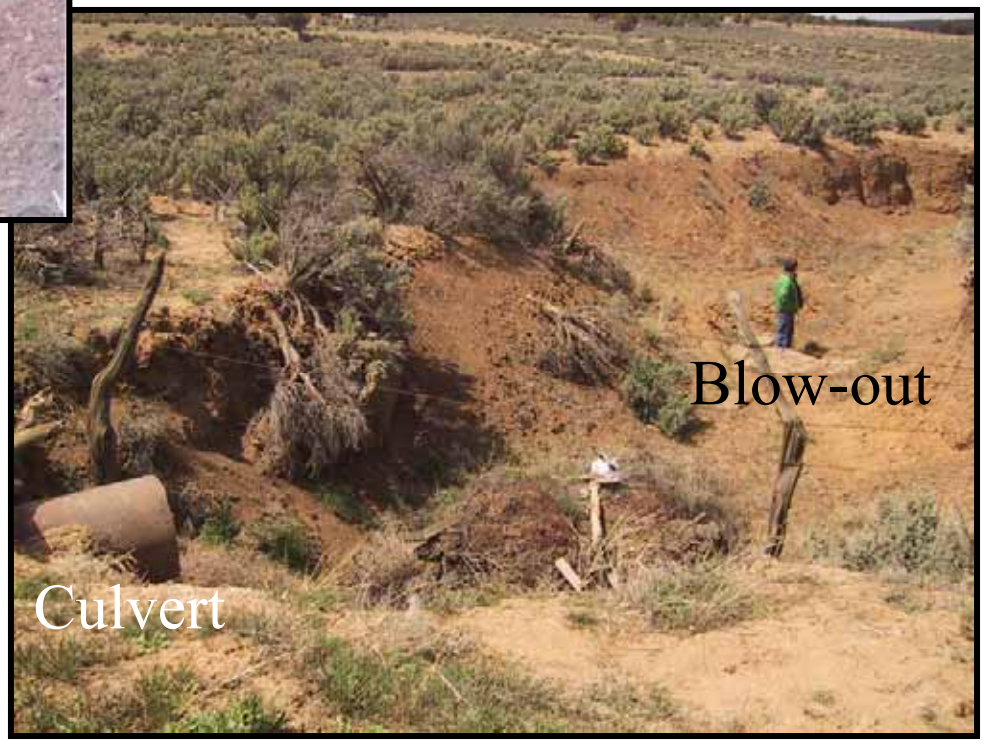
Erosion: Culvert Installation



With Culvert Outlet
Erosion Control

← Use this

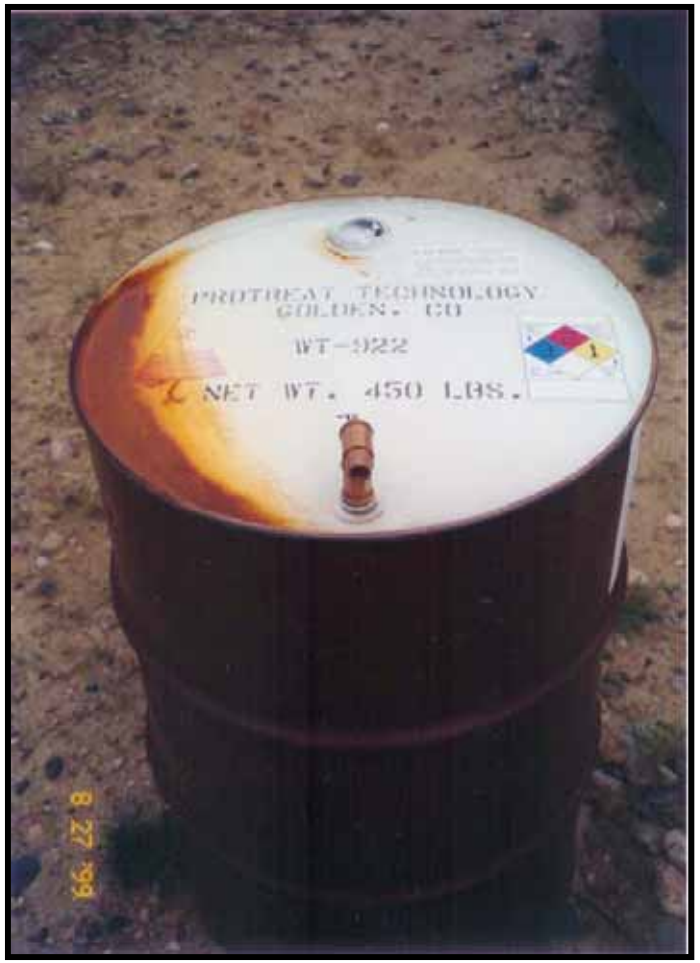
To help prevent this →



Without Culvert
Outlet Erosion Control

Storage of Hazardous Chemicals

Improper Storage



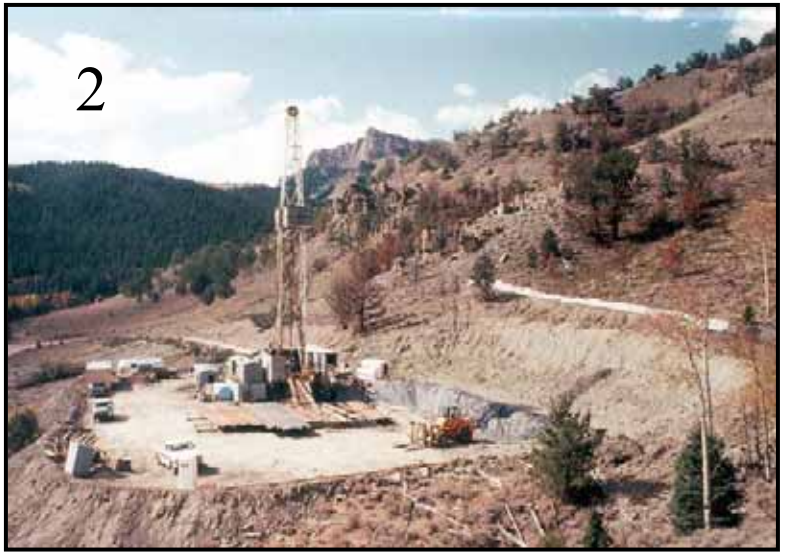
Chemicals should be placed within secondary containment in case of a spill or bullet hole.

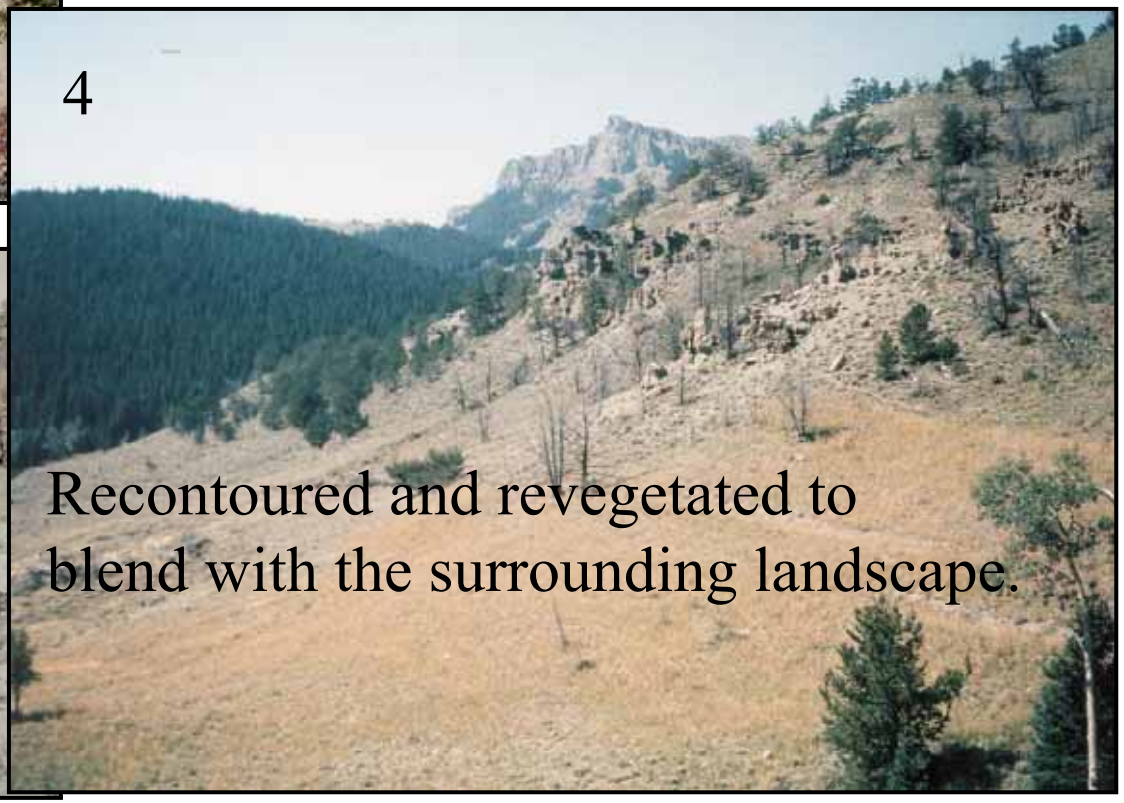
Bioremediation of Oil Field Wastes and Spills

On-site Bioremediation destroys oil field wastes & spills and reduces costs and potential liability associated with landfill disposal.

Composting oily tank bottoms with wood chips

From Construction to Final Reclamation





Recontouring Roads

Recontour unneeded roads back to the original contour.

← Leave the surface rough to trap seed, moisture, and to deter vehicle use.

Road & Pipeline Reclamation

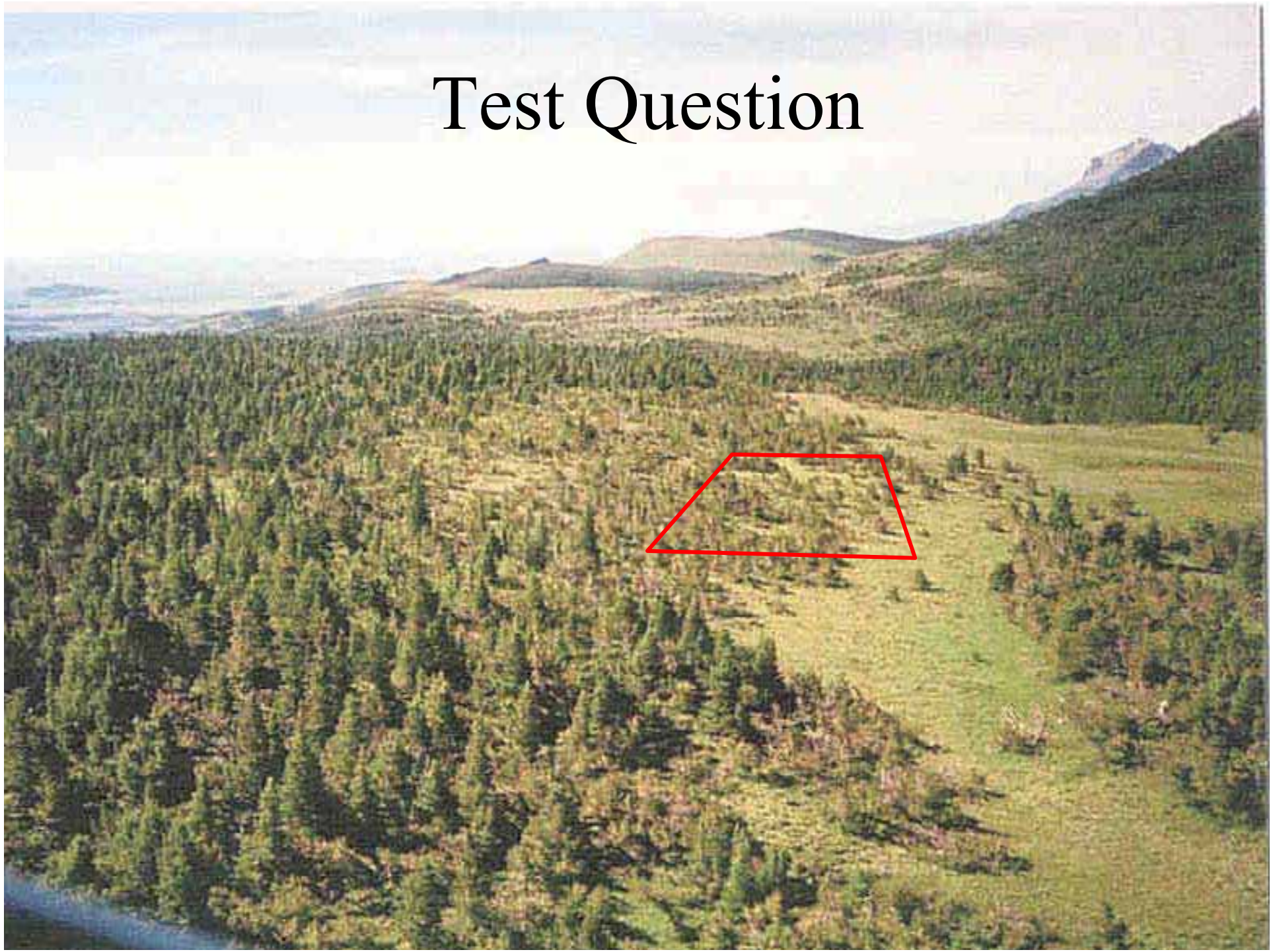
Before

After

In Summary: Why BMPs?

- BLM has a history of successful BMP use in many offices.
- BMPs protect Wildlife Habitat, Forage, Water, Scenery…
- All Land Use Plans contain Land Health Standards.
- Many BMPs have a minimal cost or result in a cost savings.
- BMP cost is a very small portion of the cost of drilling a well.
- BMPs can help to allay Public concerns and result in fewer: Permit delays caused by Comments, Protests, Appeals, & Litigation.
- BMPs can help protect the habitat of many species, including the Sage-grouse.
- It is the Right Thing to Do!

Test Question

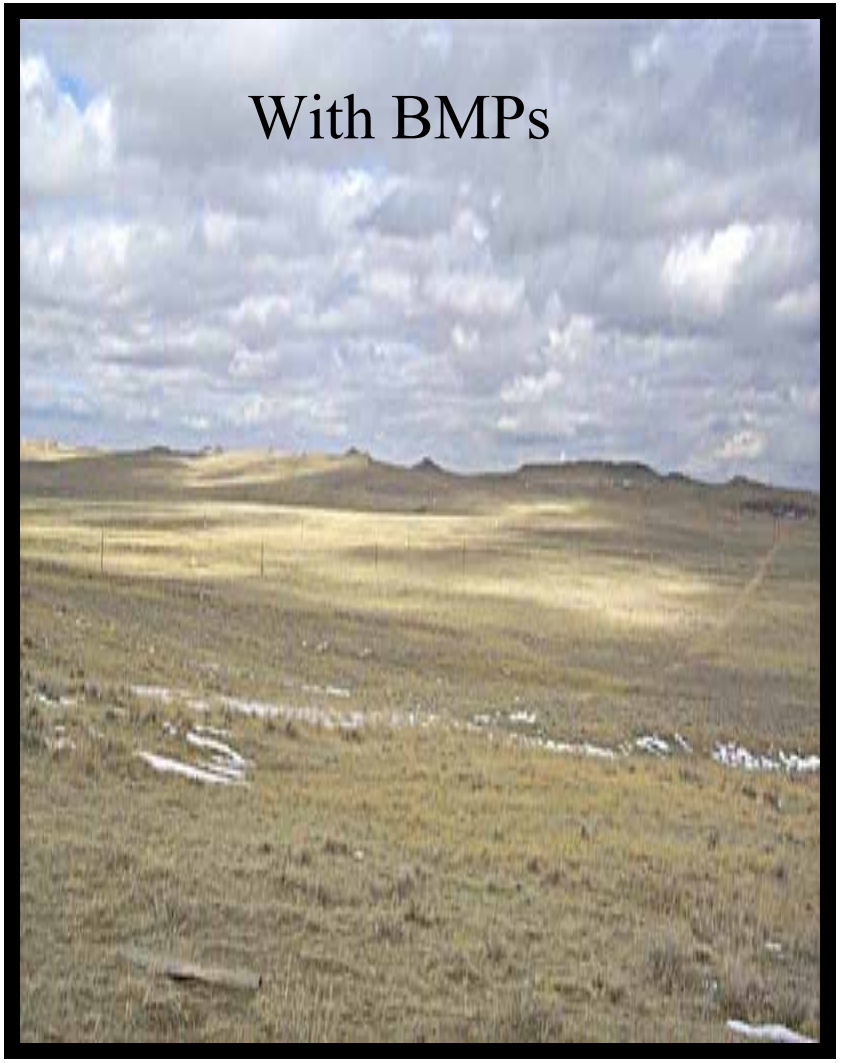


Action Taken

Institutionalizing BMPs

- Western Governors' Association CBM/BMP Handbook – April 2004
- Oil & Gas **"Gold Book"** (Early Draft)
- Web Site **http://www.blm.gov/nhp/300/wo310/O&G/Ops/operations.html**
- Visual Resource Management for Fluid Minerals Satellite Broadcast – April 2004
- Meeting with BLM and Industry Groups

Where Do We Go From Here?




OPEN
RANGE